PATENT SPECIFICATION

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COMPLETE SPECIFICATION

An Electrically Operated Dust Extractor

We, O.M.E.G.A. Elettrodomestici S.a.s., an Italian Company of Via Circonvallazione, Tione di Trento, Italy, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be paricularly described in and by the following statement:

This invention concerns an electrically operated dust extractor.

Electrically operated dust extractors are usually provided with an air filter made from textile material. Usually the filter separates the suction chamber of the extractor from a fan or impeller.

One of the disadvantages of such a dust extractor lies in the fact that after use it is difficult to clean the filter. Usually cleaning of the filter has necessitated its removal from the dust extractor for shaking and this in itself results in dust being shaken into the atmosphere.

It has been proposed to provide an inexpensive filter made from, for example, papery material. Paper-like filters can of course be disposed of after use and replaced by a new filter. This arrangement also has disadvantages.

An object of the present invention is to provide an improved electrically operated dust extractor of simple construction and efficient in operation. Such a dust extractor is adaptable to mass production and may therefore be marketed at relatively low cost.

According to the present invention an electrically operated dust extractor comprises a hollow casing provided with carrying means including a handle, a scroll within the casing and surrounding an exhaust fan, the scroll being open to atmosphere, an inwardly directed flange in the casing to which is secured a textile material air filter, a dust tray removably secured to the casing and below the filter, the said filter being held in position by means of an expansible frame connected to said flange by resilient means and means whereby the filter can be shaken whilst the tray is in position whereby dust can be removed from the filter and collected in the tray for disposal.

For a better understanding of my invention, reference may be had by way of example to the following description and the accompanying drawing in which the single figure, shows in cross section an electrically operated dust extractor made in accordance with the invention.

Referring to the drawing the dust extractor comprises a hollow casing 1 having a handle 2 connected to the top thereof. Preferably a belt or shoulder strap 3 is provided so that the dust extractor may be slung over a user's shoulder whilst in use.

The base of the casing 1 is provided with a dust collecting tray 11 removably secured thereto, for example by locking clips.

Within the casing is disposed a scroll 4 which surrounds a fan or impeller 5. The scroll is open to atmosphere. The impeller is mounted on an electric motor shaft, the electric motor not shown being housed axially and laterally of the casing 1.

Also within the casing 1 is provided an inwardly directed flange 6, to which may be tightly secured in any suitable manner a textile material air filter 9.

The filter 9 as shown in the drawing is held in position between the scroll 4 and the tray 11 by means of an expansible frame 7. The frame 7 is connected to the flange 6 by springs 8 and serves to stretch the filter 9 tightly and retain it in position between the suction chamber of the impeller 5 and the chamber through which dust containing air is sucked from an inlet opening 10.

The flange 6 has a downwardly positioned extension to which is attached a housing 12 for an electromagnet 13:14. The electromagnet coil 14 is in circuit with a source of electricity and a push button switch and thus operation of the switch will serve to energise and de-energise the magnet. The switch not shown is located on the exterior surface of the casing 1 and when operated causes the frame 7 to move towards the electromagnet, the frame springs 8 serving to return the frame to the position shown in the drawings. Successive energising and de-energising of the magnet will therefore serve effectively to shake the filter 9 to cause dust to fall into the tray 11. Shaking of the filter is carried out with the impeller inoperative.

The advantage of the above arrangement lies in the fact that when the dust has been removed from the filter 7 it is a simple matter to detach the tray 11 and empty the dust from it. After the tray 11 has been replaced the dust extractor is ready for re-use.

WHAT WE CLAIM IS:—

1. An electrically operated dust extractor comprising a hollow casing provided with carrying means including a handle, a scroll within the casing and surrounding an exhaust fan, the scroll being open to atmosphere, an inwardly directed flange in the casing to which is secured a textile material air filter, a dust tray removably secured to the casing and below the filter, the said filter being held in position by means of an expansible frame connected to said flange by resilient means and means whereby the filter can be shaken whilst the tray is in position whereby dust can be removed from the filter and collected in the tray for disposal.

2. An electrically operated dust extractor as claimed in claim 1 in which the carrying means includes a shoulder strap.

3. An electrically operated dust extractor as claimed in claim 1 in which the means for shaking the filter includes an electromagnet the housing of which is secured to an extension of said flange, the said electromagnet co-operating with a part of the frame to move the latter when energised, and a switch on the casing for energising and de-energising the electromagnet.

4. An electrically operated dust extractor as claimed in claim 3 in which the means for energising and de-energising the electromagnet includes the push button switch on the casing, the latter being in circuit with the coil of the magnet.

5. An electrically operated dust extractor substantially as hereinbefore described with reference to and as illustrated in the accompanying drawing.

For the Applicants:
WILSON, GUNN & ELLIS,
Chartered Patent Agents,
57 Market Street,
Manchester, 1.

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1 SHEET *This drawing is a reproduction of the Original on a reduced scale.*